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ABSTRACT

This study tried to determine how well a combination of junior/senior undergraduate grade point average, standardized test scores, and writing sample scores can predict a student's success in a graduate College of Education. The study used data on 164 students selected to have a slight over-representation of students with lower Miller Analogies Test (MAT) scores. University administrative offices were able to supply a writing sample for 151 of the 164 students limiting the sample to those 151 students. Writing samples were scored by 3 readers with several years experience scoring essays. Predictor variables were undergraduate grade point average from the junior and senior years, the MAT score, and the writing sample score. Dependent variables were student teaching grade, graduate grade point average, and graduation success. Data analysis indicated that although none of the variables could accurately predict student teaching performance or graduation success, the writing sample, in conjunction with the junior/senior undergraduate grade point average could be used with moderate success to predict a student's graduate grade point average. Contains six references. (JB)

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Using Writing Samples to Predict Success in a Graduate College of Education

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Objective

The objective of this study was to determine how well a combination of junior/senior undergraduate grade point average, Miller Analogies Test (MAT) scores, and writing sample scores can predict a student's success in a graduate College of Education. For this study, success is defined as (1) the student's grade in student teaching, (2) the student's graduate GPA and (3) whether or not the student graduated from the program.

Perspectives

Research studies have indicated that standardized test scores are of limited use to an admissions office wanting to predict performance of applicants to graduate Schools of Education. For the past thirty years the usefulness of standardized tests, such as the MAT, as predictors of ability in graduate school has been limited (Ainsworth and Fox, 1966; Gill and Marascuilo, 1967). Payne and Tuttle (1966) found predictive validity coefficients for the Miller Analogies Test that ranged from .00 to .59. A more recent study (de-Felix and Houston, 1986) indicates that there is a weak association between standardized entrance tests and indicators of success, particularly for minorities. Today, with the movement toward assessment devices which are more authentic and naturalistic in nature, it seems reasonable to explore the possibility of using a writing sample as a replacement for a standardized test that is used as an admission criterion.

Currently, the MAT score and a student's junior/senior undergraduate GPA are used as two of the criteria for admission to graduate study in the College of Education at a metropolitan university in the Midwest. The Office of Institutional Research at the university recently conducted a study which examined the relationship between graduate GPA and both junior/senior undergraduate GPA and MAT scores (Office of Institutional Research, 1992). The study found that junior/senior undergraduate GPA and the MAT scores have only a limited amount of relationship ($r = .29$ and $r = .30$, respectively) to graduate grade point average. This current study extends the previous study by (1) including a writing sample as a predictor of graduate grade point average and (2) considering a student's grade in student teaching and whether or not the student graduated from the program as additional dependent variables.

Methods

The Office of Institutional Research at the university supplied a list of nearly 1,500 Master of Arts in Teaching students who were taking courses in the College of Education from September 1989 to August 1991. The list of students was then stratified with respect to MAT scores. A systematic sample of 164 students was selected with a slight over-representation of students with MAT scores of 29 and below to assure enough subjects were at the lower end of the MAT scale.

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A writing sample for each of the identified students was then collected from the administrative offices at the university. Writing samples could not be located for 13 (8%) students. Thus, the final sample consisted of 151 students. Data for the remaining variables were collected from the university's Office of Institutional Research.

Data Sources

Predictor Variables

Junior/Senior Undergraduate GPA. This first predictor was determined by averaging the grade point values (A = 4, B = 3, C = 2, D = 1, F = 0) for all courses taken during the student's junior and senior years in undergraduate school.

Miller Analogies Test (MAT) Score. The raw score from the Miller Analogies Test was used as a second predictor in this study. Raw scores on the MAT may range from 0 to 100.

Writing Sample Score. As part of the admission process for graduate study, applicants complete a written statement, which in the past was read, but received less weight than other factors in determining admission to the graduate school. The following statement appears on the application form:

> Please describe your reasons for wishing to complete the degree for which you are applying. Present some of your future professional plans and indicate what you hope to accomplish from this additional study. This statement is one of the criteria used to evaluate your application.

The writing samples were scored independently by 3 readers who have had several years experience scoring essays which are used as an admission criterion for alternative teacher certification programs in Texas. The writing samples were scored according to the following 4-point scale which is a modification of the scale used to evaluate essays written by applicants to the Texas alternative teacher certification programs:

4 - A well organized essay that demonstrates clear competence in writing, although it may have a few minor errors or occasional awkwardness of expression.
3 - An essay that is well-written but somewhat general and lacking in details. It may have 1 or 2 major errors and some minor errors.
2 - The essay may be too brief, underdeveloped or too general to deal adequately with the topic, or the essay may indicate problems in basic writing skills.
1 - The essay displays serious faults in writing and weakness in content.

To score the writing samples each reader assigned one of the four score points to the essay and was also allowed to indicate a plus (+) or a minus (-) if the scorer thought that the writing sample was at the top or at the bottom of a particular score category. In only 2 instances out of 151 did the scores of any two readers differ by more than 1 point. In those two cases the difference was resolved so that all readers arrived at scores that were no more than 1 score point apart.

To increase the variability in the essay score scale, the scores of the 3 readers were summed and multiplied by 4, and then one point was added to the result for each plus (+) given by the readers (maximum of 3 points), and one point was subtracted from the result for each minus (-) given by the readers (maximum of 3 points). Thus, the possible range of scores for the writing sample was 12 to 51. The interrater reliability was r = .92 for this study.

Dependent Variables

Grade in Student Teaching. To receive the Master of Arts in Teaching degree, each student must complete a term of student teaching. For analysis purposes, the student teaching grade was measured using the following scale: (A = 4, B = 3, C = 2, D = 1, F = 0).

Graduate GPA. For each student in the sample the grade point average was determined by averaging the grade point value using the scale above for all graduate courses taken in the college.

Graduation Success. If a student had graduated by June 1993, the student was assigned a code of 1 for the graduate success variable. If a student had not graduated by June 1993, the student was assigned a 0 for the graduation success variable.

Results

Means and standard deviations were determined for the MAT and the GPA variables. In addition, correlations among all the predictor and dependent variables were calculated. The mean MAT score reflected the slight over-sampling of students with lower MAT scores (sample mean = 45, population mean = 47). A similar finding was also evident for graduate GPA (sample mean = 3.54, population mean = 3.86) and junior/senior GPA (sample mean = 2.87, population mean = 3.09).

The only significant correlations ($p < .01$) between the predictors and the dependent variables were between graduate GPA and the following predictor variables: MAT scores ($r = .26$), junior/senior GPA ($r = .37$) and writing sample scores ($r = .40$) (see Table 1). Based on this finding, a stepwise regression was performed using graduate GPA as the dependent variable and MAT scores, junior/senior GPA and the writing sample scores as predictors. The results of the regression analysis indicated that a combination of writing sample scores and junior/senior GPA resulted in multiple R of .48. MAT scores did not significantly contribute to the regression equation.

Further investigation of this relationship between graduate GPA and (1) writing sample scores, (2) junior/senior undergraduate GPA, and (3) MAT scores, indicated that students with an average graduate GPA of 3.00 or above had a mean essay score of 2.35 (SD = .64) on the 4-point scale, a mean junior/senior undergraduate GPA of 2.90 (SD = .45), and an average MAT score of 45.6 (SD = 18.0) (see Table 2). Those students with an average graduate GPA of below 3.00, which is required for graduation, had a mean essay score of 1.76 (SD = .42) on the 4-point scale, a mean junior/senior undergraduate GPA of 2.50 (SD = .30), and an average MAT score of 34.5 (SD = 17.8). These differences between the two groups were significant for the essay scores ($t = 3.49$ $p < .001$), the junior/senior undergraduate GPA ($t = 2.88$, $p < .01$)and the MAT ($t = 2.26$, $p < .05$). Thus, the writing sample and junior/senior GPA were found to be the most effective variables for distinguishing between the students who were eligible and the students who were not eligible for graduation.

Finally, to investigate further the relationship between the predictor variables and program completion, the students were divided into four groups: (1) those who had graduated by August 1993 (Graduated); (2) those continuing to take courses between August 1992 and August 1993 (Continuing); (3) those who had taken no courses between August 1992 and August 1993 (Stopped-out); (4) those who had been dropped from the program because of academic reasons (Dropped). The results of these comparisons, shown in Table 3, indicated that while all three dependent variables could significantly differentiate the group of students who had graduated from the group of students who had been dropped from the program for academic reasons, only the writing sample was able to significantly differentiate the group of students who were continuing to take courses from the group of students who had been dropped from the program for academic reasons.

Educational Importance

The data from this study indicate that although none of the variables could accurately predict student teaching performance or graduation success, the writing sample, in conjunction with the junior/senior undergraduate GPA, could be used with moderate success to predict a student's graduate GPA. If the results of this study could be replicated with students seeking a Masters of Arts in Teaching degree and with students seeking other masters degrees in Education, then Colleges of Education may choose to include the evaluation of writing samples as a more authentic and valid method of assessing the ability of students to do graduate work.

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Table 1

Correlations Between the Predictor and Criterion Variables

Predictors	Criterion Variables		
	Student Teaching Grade	Program Completion (Graduation)	Graduate Education GPA
Writing Sample	.17	.05	.40**
JrSr GPA	-.15	.13	.37**
Millers Test	-.09	.09	.26**

**p < .01; n = 151

Multiple R for Writing Sample and JrSr GPA predicting Graduate Education GPA is R = .48.

Table 2

Performance on the Predictor Variables
For Students with Graduate GPA's Above and Below 3.00

Predictors	Students with Graduate GPAs ≥ 3.00			Students with Graduate GPAs < 3.00			
	mean	SD	n	mean	SD	n	t
Writing Sample	2.35	.64	136	1.76	.42	15	3.49***
JrSr GPA	2.90	.45	131	2.50	.30	11	2.88**
Millers Test	45.6	18.0	133	34.5	17.8	15	2.26*

*** p < .001, ** p < .01, * p < .05

Table 3

Performance on the Predictor Variables for Four Categories of Student Status

Predictors		Student Status			
		Graduated	Continuing	Stopped-out	Dropped
Writing Sample	mean	2.38*	2.33*	2.25	1.71*
	SD	.67	.67	.58	.42
	n	71	24	46	10
JrSr GPA	mean	2.96*	2.94	2.78	2.49*
	SD	.45	.41	.46	.30
	n	65	23	45	9
Millers Test	mean	47.5*	38.9	45.5	31.6*
	SD	19.7	15.0	17.3	9.9
	n	69	23	46	10

*$p < .05$; significant differences are shown for each row.

Note: For the Writing Sample variable, the Graduated and Continuing students did not score significantly different from each other but did score significantly higher than the Dropped students.